

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region I - EPA New England

Drafted Date: September 14, 2015

Finalized Date: October 8, 2015

SUBJECT: Full Compliance Evaluation of Organic Dyes and Pigments LLC in East Providence, RI

FROM: Elizabeth Kudarauskas, Air Technical Unit *EAK 10/12/15*

THRU: Christine Sansevero, Senior Enforcement Coordinator, Air Technical Unit *CMS 10/8/15*

TO: File

Facility Information

- A. Facility Name: Organic Dyes and Pigments LLC
- B. Facility Location: 84 Valley Street, East Providence, RI
- C. Facility Mailing Address: Same
- D. Facility Contact: Candace Turner, Environmental & Safety Manager
- E. AFS #:

Background Information

- A. Date of Inspection: September 2, 2015
- B. US EPA Representative(s): Elizabeth Kudarauskas, Air
- C. State Representative(s): Richard Younkin, RI DEM
- D. Federally Enforceable Requirements Covered During the Inspection:
40 CFR Part 63 Subpart VVVVVV
- E. State Permits: None
- F. Previous Enforcement Actions Last 5 Years: None

Purpose of Inspection

The facility was targeted for inspection by the Office of Environmental Stewardship's Air Technical Unit to evaluate compliance with the National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources (Subpart VVVVVV).

Inspection

A. Entry

Ms. Kudarauskas and Mr. Younkin arrived at the facility on Valley Street at 9:30 am and entered through the main entrance. After announcing the inspection, the inspectors were led to a nearby conference room.

B. Opening Conference

Ms. Kudarauskas introduced herself and showed her credentials to Ms. Turner. Ms. Kudarauskas explained that Mr. Younkin is an air inspector for the RI DEM. Ms. Kudarauskas

stated clarified that the inspection was a routine unannounced inspection with the purpose of evaluating the facility's compliance with air regulations.

Ms. Kudarauskas asked some background questions.

Company/Facility History

The company began operation in 1949 as Organic Chemical Corp. At some point the name was changed to Organic Dyestuffs Corp. The company operated as Organic Dyestuffs Corp. until 2014 when the name was changed again to Organic Dyes and Pigments LLC.

Throughout the years the company has had several locations. At this time, there is only one other location in Concord, North Carolina. Ms. Turner stated that the Rhode Island facility deals with powdered chemicals and the North Carolina facility deals with liquid chemicals.

General Company Information

The Organic Dyes and Pigments facility in Rhode Island does not have any air permits from the state. The facility did, however, submit an initial notification of 40 CFR Part 63 Subpart 6V to EPA.

According to Ms. Turner, the NAICS code for the facility is 325130, Synthetic Dye and Pigment Manufacturing.

Approximately 23 people are employed by Organic Dyes and Pigments at the East Providence facility. The facility operates Monday through Friday from 7am to 4:30 pm.

Process Description

At the East Providence facility, Organic Dye and Pigments manufactures custom blend powdered dyes. Ms. Turner stated that no chemical reactions occur at the facility. Rather, dyes are blended, diluted and repackaged.

Organic Dyes and Pigments primarily sells product to customers in the textile industry. However some customers deal with detergents and anodized aluminum. Organic Dye and Pigments product is a solid (powder) that is custom-blended and color-adjusted for shade and intensity.

The manufacturing process is a batch process that involves blending powdered dyes. Diluents, in the form of powdered salts, are often added to the dyes. The dyes are then packaged and shipped to the customer.

Ms. Turner stated that some of the dyes used at the Rhode Island facility contain Chromium 3 and other metals bonded to the molecule of the dye.

Organic Dyes and Pigments does not have any emissions control at the facility. The facility utilizes a HVAC dust collection system to control dust from the mixing operation. The HVAC system removes dust and vents the air back into the room.

Organic Dyes and Pigments does not discharge process wastewater. The facility operates a closed loop wastewater system and has been issued a no discharge permit.

Organic Dyes and Pigments uses water to clean the tanks. The water removes the color and the wastewater is processed and reused. The wastewater system is a batch process that involves passing the wastewater through a filter. The water is then recycled back into the process and the filter is discarded as hazardous waste.

Organic Dyes and Pigments has two very small boilers that are used for building heat. The main office boiler has a capacity of 0.218 MMBtu/hr and burns #2 oil. The lab boiler has a capacity of 0.0405 MMBtu/hr and also burns #2 oil.

The facility also uses a very small emergency generator. The generator is a 13 horsepower gasoline unit. The generator is portable and wheeled out when needed in an emergency. When it is not in use, the emergency generator is stored in a storage room in the warehouse.

C. Plant Walkthrough

After providing the appropriate personal protective equipment, Ms. Turner led the inspectors on a tour of the facility. The inspectors were instructed to don booties, safety glasses, and face masks.

The tour started at the facilities research and development ("R&D") labs. In the area of the R&D labs was space for small sample storage. Ms. Turner explained that the labs test products to determine if they will meet customer specifications. Many small samples of dyes are cataloged and stored on-site. See photos 1 and 2.

Behind the R&D laboratory is the heated chemical storage area. At the time of the inspection large garage-type doors were open in this area. The area is used to store wet and dry chemicals that are primarily raw materials. For example Ms. Kudarauskas noted the following chemicals stored in this area:

- Bags of sodium acetate
- Bags of citric acid anhydrous
- Bags of malodextrin
- Drums labeled APG-5265

See photos 3-5.

The inspectors were then led to the building next door. This building is the main warehouse and is used to store most of the raw materials. See photo 6.

The annex area was on the other side of the main warehouse building. This area is primarily used to store finished products. See photo 7.

The inspectors were then led across the street to the manufacturing area of the facility. The inspectors entered the building through a plastic curtain type of door. Ms. Kudarauskas observed

4 large mixers in the first room. Ms. Kudarauskas saw HVAC-type ductwork which pulled air from above the mixers. See photo 8. Elephant trunk type of hoods were pulling air from the areas where powdered dyes would be added. All ductwork vented to a common air handling system. The air system was a Donaldson Torit system. See photo 9. Ms. Turner described the air handling system as an air filtration system. The air filtration system then vented the air back into the room. Next to the air filtration system is a monitor which displays the pressure on the air system. At the time of the inspection the pressure reading on the unit was 0.9.

The inspectors continued into a second room that contained two smaller mixers and a separate air filtration system. See photo 10. The pressure reading on this air filtration system was a negative number (-3.1). Several drum mixers were also in this area.

Ms. Turner then led the inspectors to the basement where the wastewater filtration system is located. See photo 11. The wastewater system is operated in batches. The wastewater is collected in the basement. When enough wastewater is collected, the wastewater passes through filters. A concrete berm encircles the entire wastewater system. Each filter is used once and the material that remains on the filter is treated as hazardous waste.

D. Record Review

Organic Dyes and Pigments LLC submitted an initial notification to EPA stating that the facility was subject to the requirements of Subpart 6V. The letter stated that the facility used chromium compounds and was therefore subject to the regulation. The facility has not, however, submitted a Notice of Compliance Status Report as required in Subpart 6V.

Although an initial notification was submitted, the facility had not implemented the management practices, recordkeeping or reporting requirements of Subpart 6V.

Ms. Kudarauskas reviewed the applicability requirements of Subpart 6V with Ms. Turner. Ms. Turner again stated that no chemical reaction occurs at Organic Dyes and Pigments. Ms. Kudarauskas stated that simply mixing dyes may not meet the intent of the definition of chemical manufacturing process in Subpart 6V. Ms. Kudarauskas stated that she would need to discuss this type of operation with others at EPA.

Ms. Kudarauskas reviewed the emission calculations for Organic Dyes and Pigments for the past several years. Ms. Turner stated that she uses an equation to calculate emissions each year. Ms. Turner provided the following equation:

Dye shipped out (produced, in pounds) x 0.001 = pounds of dye emitted to the air

Pounds of dye emitted to the air x 0.06 = pounds of metal to the air

Ms. Kudarauskas asked Ms. Turner where the 0.001 in the first equation comes from. Ms. Turner stated that she did not know but the equation has always been used to calculate emissions.

The 0.06 in the second equation is an assumption of metal content in the dye. Ms. Turner stated that at full strength all dyes contain less than 6% metal. So, for any dye that contains a metal, Organic Dyes and Pigments assumes that 6% of the product is metal. Organic Dyes and Pigments assumes that this an overestimate of emissions.

According to Ms. Turner, the dyes contain the following metals:

- Chromium
- Copper
- Cobalt
- Zinc

Organic Dyes and Pigments has been submitting emission inventories to the RI DEM using these calculations for several years. Most recently, in 2014, Organic Dyes and Pigments reported the following emissions:

Chromium – 7.99 pounds

Copper – 1.25 pounds

Cobalt – 0.15 pounds

Zinc – 0.14 pounds

E. Multi-media Checklist

Ms. Kudarauskas completed the multi-media checklist.

F. Closing Conference

Ms. Kudarauskas stated that she was not able to determine applicability of Subpart 6V while on-site for the inspection.

Ms. Kudarauskas told Ms. Turner that she would also have to evaluate the facility emission calculations to determine applicability of several other Clean Air Act regulations.

Ms. Kudarauskas told Ms. Turner that the facility could do a better job with general housekeeping. Ms. Kudarauskas reminded Ms. Turner that it was always a good idea for the facility to properly dispose of material (equipment, chemicals, and products) that the facility no longer used.

G. Follow-up

Mr. Younkin checked with Karen Slattery of RI DEM and could find no record of the 0.001 factor used in the Organic Dye and Pigment emission calculation.

Organic Dyes and Pigments LLC
Valley Street, East Providence, RI

PHOTO LOG

Elizabeth Kudarauskas, EPA Inspection September 2, 2015

Photo 1: Small Sample Storage Area 10:15 am



Photo 2: Small sample storage area 10:16 am



Photo 3: Heated chemical storage area 10:17 am



Photo 4: Heated chemical storage area 10:17 am



Photo 5: Heated chemical storage area 10:20 am



Photo 6: Main warehouse 10:22 am



Photo 7: Main Warehouse Annex 10:26 am



Photo 8: Mixer 10:30 am



Photo 9: Air Handler 10:31 am



Photo 10: Additional Mixing Tanks



Photo 11: Wastewater filtration system

